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DES MOINES, IA 50309-2721

EXAMINER
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SEDIGHIAN, REZA

ART UNIT	PAPER NUMBER
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2633

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/812,545

**Applicant(s)**

MELICK ET AL.

**Examiner**

M. R. Sedighian

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☐ Claim(s) 1-4, 21-23, 25, 28, 30, 31, 38-43, 45-47, 49, 50 and 58-66 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 21-23, 25, 28, 30, 31, 38-43, 45-47, 49, 50 and 58-66 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

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1. This communication is responsive to applicant's 12/19/05 amendments in the application of Melick et al. filed 3/20/01. The amendments have been entered. Claims 1-4, 21-23, 25, 28, 30-31, 38-43, 45-47, 49-50, 58-66 are now pending.

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 43 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification as originally filed does not describe about a transmission pulse characteristic corresponding to the bits of data, being the phase of transmission pulse.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 4, 38-42, 46-47, and 50 are rejected under 35 U.S.C. 102(b) as being anticipated by Calfee et al. (US Patent No: 4,539,992).

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Regarding claims 1, 38, 47, Calfee teaches a method of transmitting data (col. 3, lines 58-62), comprising: receiving digital bits of data from a memory unit (col. 6, line 14-17, col. 8, lines 5-9 and 32, fig. 2, note that the inputted signal 30 consists of 20 data bits); transforming the bits of data into a transmission pulse (col. 6, lines 16-18, col. 8, lines 8-12 and 34, fig. 2), the transmission pulse having a pulse characteristic selected from a set of three or more predetermined pulse characteristics (col. 6, line 19-20, col. 7, line 24, col. 8, line 11, col. 17, line 55), one of which is corresponding to the bits of data (col. 8, lines 10-12); and transmitting the transmission pulse over a guided medium (col. 6, lines 40-41 and the transmission medium between modulator 34 and amplifier 40, fig. 2) without using a carrier signal to transmit the transmission pulse (col. 6, lines 50-57). As to claim 47, Calfee teaches the transmission pulse having a pulse position selected from a set of three or more predetermined pulse positions (col. 6, lines 17-22, col. 8, lines 11-15).

Regarding claims 4, 46, and 50, Calfee further teaches receiving (46, fig. 2) the transmission pulse from the transmission medium (col. 6, lines 67-68, col. 7, lines 1-3), and transforming the transmission pulse into a digital bit of data corresponding to the characteristics of the transmission pulse (col. 7, lines 12-25).

Regarding claim 39, Calfee teaches the transmission pulse characteristics corresponding to the bits of data is the transmission pulses position in time (col. 6, lines 15-18).

Regarding claim 40, Calfee teaches the transmission pulse characteristic corresponding to the bits of data is the duration between transmission pulses (col. 17, lines 54-57).

Regarding claim 41, Calfee teaches the transmission pulse characteristic corresponding to the bits of data is the amplitude of the transmission pulse (col. 18, lines 38-41).

Regarding claim 42, Calfee teaches the transmission pulse characteristic corresponding to the bits of data is the duration of the transmission pulses (col. 17, lines 54-57).

6. Claims 1, 4, 21-23, 25, 28, 31, 38-42, 46-47, 50, and 58-64 are rejected under 35 U.S.C. 102(e) as being anticipated by Rybicki et al. (US Patent Application Publication No: 2001/0055353 A1).

Regarding claims 1 and 38, Rybicki teaches a method of transmitting data (page 1, paragraph 0001 and fig. 1), comprising: receiving digital bits of data (data receiver 14, and set of bits 24 in fig. 1) from a memory unit (data receiver 14, figs. 1, 15 and page 9, paragraph 0089); transforming the bits of data into a transmission pulse (pulse 26, fig. 1 and page 3, paragraph 0049), the transmission pulse having a pulse characteristic selected from a set of three or more predetermined pulse characteristics (page 5, paragraph 0065, page 8, paragraph 0076, page 9, paragraph 0087 and figs. 9, 13, 26), one of which is corresponding to the bits of data (page 8, paragraph 0076, page 9, paragraph 0087); and transmitting the transmission pulse over a guided medium (page 3, paragraph 0049) without using a carrier signal to transmit the transmission pulse (the wireless path, or the IR path, fig. 1).

Regarding claim 4, Rybicki further teaches receiving (46, fig. 1) the transmission pulse from the transmission medium (path 32, fig. 1), and transforming the transmission pulse into a digital bit of data corresponding to the characteristics of the transmission pulse (page 3, paragraph 0050).

Regarding claim 21, Rybicki teaches receiving at least two digital bits of data (data receiver 14, and set of bits 24, in fig. 1) from a memory unit (data receiver 14, figs. 1, 15 and

page 9, paragraph 0089) and transforming the two digital bits of data into a transmission pulse (pulses 26, fig. 1 and page 3, paragraph 0049), wherein the transmission pulse having a pulse duration selected from a set of at least three predetermined pulse duration (page 9, paragraph 0087 and 234, fig. 13), one of which corresponds to the bits of data (page 9, paragraph 0087), and transmitting the transmission pulse without using a carrier signal to transmit the transmission pulse (page 3, paragraph 0049, the IR transmission path 32 in fig. 1).

Regarding claims 22 and 25, Rybicki teaches the transmission pulse is a pulse of light (20, fig. 1) that is transmitted over a fiber optic cable (page 3, paragraph 0049).

Regarding claim 23, Rybicki teaches the transmission pulse is an electronic pulse (pulses 26, fig. 1) that is transmitted over a guided media (the guided medium between modulation circuit 16 and amplifier 18, fig. 1).

Regarding claims 28 and 47, Rybicki teaches the transmission pulse having a pulse position selected from a set of three or more predetermined pulse positions, one of which corresponds to the bits of data (page 8, paragraph 0076 and fig. 9).

Regarding claim 31, Rybicki further teaches receiving (46, fig. 1) the transmission pulse from the transmission medium (path 32, fig. 1), and transforming the transmission pulse into a digital bit of data corresponding to the characteristics of the transmission pulse (page 3, paragraph 0050).

Regarding claim 39, Rybicki teaches the transmission pulse characteristics corresponding to the bits of data is the transmission pulses position in time (page 8, paragraph 0076).

Regarding claim 40, Rybicki teaches the transmission pulse characteristic corresponding to the bits of data is the duration between transmission pulses (page 8, paragraph 0074).

Regarding claim 41, Rybicki teaches the transmission pulse characteristic corresponding to the bits of data is the amplitude of the transmission pulse (page 3, paragraph 0049).

Regarding claim 42, Rybicki teaches the transmission pulse characteristic corresponding to the bits of data is the duration of the transmission pulses (page 9, paragraph 0087).

Regarding claims 46 and 50, Rybicki further teaches receiving (46, fig. 1) the transmission pulse from the transmission medium (path 32, fig. 1), and transforming the transmission pulse into a digital bit of data corresponding to the characteristics of the transmission pulse (page 3, paragraph 0050).

Regarding claim 58 and 62, Rybicki discloses representing at least two bits of data (data receiver 14, fig. 1 and page 9, paragraph 0089, note that data receiver 14 outputs a set of 24 bits) by varying a pulse characteristic of a time modulated ultrawideband pulse (page 3, paragraph 0049, lines 8-11), wherein the pulse characteristic is selected to be one of a set of at least three pulse characteristic based on the value of the at least two bits of data (page 9, paragraph 0087), and transmitting the time modulated ultrawideband pulse over a guided medium (page 3, paragraph 0049 and fig. 1) to a receiver (38, fig. 1).

Regarding claims 59 and 64, Rybicki teaches each of the pulse characteristic within the set is a pulse duration (page 9, paragraph 0087).

Regarding claim 60, Rybicki teaches each of the pulse characteristic within the set is a pulse position (page 8, paragraph 0076).

Regarding claim 61, Rybicki teaches each of the pulse characteristic within the set is a pulse spacing (page 8, paragraph 0076).

Regarding claim 63, Rybicki teaches transmitting the time modulated ultrawideband pulse (page 3, paragraph 0049) over a guided medium (path 32, fig. 1) to a receiver (38, fig. 1).

7. Claims 58-64 are rejected under 35 U.S.C. 102(e) as being anticipated by McCorkle et al. (US Patent No: 6,700,939).

Regarding claims 58 and 62, McCorkle teaches a method of transmitting data (col. 2, lines 51-65), comprising: representing at least two bits of data (col. 9, lines 59-62, col. 10, lines 53-56) by varying a pulse characteristic of a time modulated ultrawideband pulse (col. 5, lines 30-45, col. 14, lines 40-55), wherein the pulse characteristic is selected to be one of a set of at least three pulse characteristic based on the value of the at least two bits of data (col. 5, lines 40-44, col. 9, lines 37-40), and transmitting the time modulated ultrawideband pulse (col. 9, lines 59-62, col. 10, lines 53-59) over a guided medium (121, 108, 110, 123, 125, fig. 1) to a receiver (col. 3, lines 22-25, col. 18, lines 40-55 and fig. 2A). As to claim 62, McCorkle teaches a method of data transmission that is comprised of representing a plurality of bits of data (col. 9, lines 60-61, col. 10, line 54) using a pulse characteristic of a single time modulated ultrawideband pulse (col. 10, lines 55-56) and transmitting the time modulated ultrawideband pulse (col. 9, lines 59-62, col. 10, lines 53-59).

Regarding claims 59 and 64, McCorkle teaches each of the pulse characteristic within the set is a pulse duration (col. 5, lines 42-44).



Regarding claim 60, McCorkle teaches each of the pulse characteristic within the set is a pulse position (col. 4, lines 52-55, col. 9, lines 55-57).

Regarding claim 61, McCorkle teaches each of the pulse characteristic within the set is a pulse spacing (col. 9, lines 37-40).

Regarding claim 63, McCorkle teaches transmitting the time modulated ultrawideband pulse (col. 9, lines 59-62, col. 10, lines 53-59) over a guided medium (121, 108, 110, 123, 125, fig. 1) to a receiver (col. 3, lines 22-25, col. 18, lines 40-55 and fig. 2A).

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Calfee et al. (US Patent No: 4,539,992) in view of Kohdaka et al. (US Patent No: 5,245,345).

Regarding claim 2, Calfee discloses one set of the pulse characteristics corresponds to the pulse durations (col. 17, lines 54-57). Calfee differs from the claimed invention in that Calfee does not specifically disclose the length of pulse duration corresponds to numbers 0 through 9. Kohdaka teaches a method of pulse signal transmission (col. 4, lines 19-24), wherein pulse duration length corresponds to numbers 0 through 9 (col. 5, lines 49-61). Therefore, it would have been obvious to an artisan at the time of invention to incorporate a method of signal pulse transmission such as the one of Kohdaka for the pulse transmission system of Calfee to transmit variable duration signal pulses of data.

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10. Claims 3, 30, 45, 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Calfee et al. (US Patent No: 4,539,992) in view of Cox (US Patent No: 5,050,189).

Regarding claims 3, 30, 45, 49, Calfee differs from the claimed invention in that Calfee does not specifically disclose the data is in the form of universal character encoding. Cox teaches a method of signal pulse transmission system (col. 5, lines 60-65), wherein the data is in the form of universal character encoding (col. 6, lines 38-40). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate a method of universal character encoding, as it is taught by Cox, for the data transmission system of Calfee in order to transmit a plurality of different data signals.

11. Claims 3, 30, 45, 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rybicki et al. (US Patent Application Publication No: 2001/0055353 A1) in view of Atkin et al. (US Patent No: 6,289,303).

Regarding claims 3, 30, 45, 49, Rybicki differs from the claimed invention in that Rybicki does not specifically disclose the data is in the form of universal character encoding. However, it is well known to use universal character encoding standards for representing text. For example, Atkin discloses universal character encoding can be used to encode all the characters used for written languages (col. 4, lines 35-50). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate a method of universal character encoding, as it is taught by Atkin, for the data transmission system of Rybicki to encode different characters.

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12. Claims 28 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miwa (US Patent No: 4,921,468) in view of Fitelson et al. (US Patent No: 4,703,471), or Swenson et al. (US Patent No: 6,426,813).

Regarding claims 28, Miwa teaches a method of transmitting data (col. 3, lines 4-6) with photonic pulses (col. 3, lines 5-7), comprising: receiving digital bits of data (col. 4, lines 61-68, col. 5, lines 17-20) from a memory unit (17, fig. 1); transforming the bits of data (col. 4, line 68, col. 5, line 7) into a transmission pulse of light (col. 7, lines 5-7 and 9, 3, fig. 1), the transmission pulse having a pulse position selected from a set of at least three predetermined pulse positions, one of which corresponds to the bits of data (col. 5, lines 49-54); transmitting the transmission pulse without using a carrier signal to transmit the transmission pulse (col. 3, lines 4-8). Miwa differs from the claimed invention in that Miwa does not specifically disclose transmitting the optical pulses over a fiber optic cable. However, it is well known that optical pulses can be transmitted over a fiber optic cable. Miwa teaches the information can be transmitted between a transmitter and a receiver over a fiber optic cable (col. 1, lines 12-18). Fitelson teaches optical signal pulses (col. 7, lines 43-47) can be transmitted over a fiber optic cable (T<sub>01</sub>, fig. 1). Likewise, Swenson teaches coupling light pulses onto a fiber optic link (col. 7, lines 5-9). As it is taught by Fitelson and Swenson, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate a method of optical fiber signal pulse transmission, for the signal light transmission system of Miwa, to provide a high speed data transmission system.

Regarding claim 31, Miwa teaches receiving the transmission pulse (col. 8, lines 30-33, 56-59), and transforming the transmission pulse into digital bits of data corresponding to the

position of the transmission pulse (col. 9, lines 23-25, col. 10, lines 1- 31). As to receiving the transmission pulse from a fiber optic cable, it is well known that light pulses can be transmitted and received through a fiber optic cable, as discussed above in claim 28.

13. Claim 65 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rybicki et al. (US Patent Application Publication No: 2001/0055353 A1) in view of Campana, Jr. (US Patent No: 6,198,783 B1).

Regarding claim 65, Rybicki differs from the claimed invention in that Rybicki does not disclose encoding the plurality of bits into a base 10 representation. Campana teaches a system for wireless serial transmission of encoded information (col. 21, lines 10-15 and 102, fig. 7), wherein a plurality of bits are encoded in a base 10 representation (col. 46, lines 4-7). Therefore, it would have been obvious to an artisan at the time of invention to incorporate a method of base 10 encoding, as disclosed by Campana, for the encoding in the data transmission system of Rybicki to encode high amounts of information.

14. Claim 66 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rybicki et al. (US Patent Application Publication No: 2001/0055353 A1) in view of Emelko (US Patent No: 5,903,231).

Regarding claim 66, Rybicki differs from the claimed invention in that Rybicki does not disclose encoding the plurality of bits into a number base greater than base 2. Emelko discloses a system for encoding base N data using a multi-level coding scheme (col. 3, lines 65-67, col. 4, lines 1-11), wherein a plurality of bits are encoded into a number base greater than base 2 (col. 4,

lines 11-14). Therefore, it would have been obvious to an artisan at the time of invention to incorporate a method of base 2 encoding, as disclosed by Emelko, for the encoding in the data transmission system of Rybicki to achieve a high data transfer rate and to use bandwidth more efficiently.

15. Applicant's arguments filed 12/19/05 have been fully considered but they are not persuasive.

Remark states Calfee does not disclose multiple bits are represented by a single pulse, and claim 1 requires: "transforming the bits of data into a transmission pulse". Calfee teaches an input signal 30 that consists of 20 data bits (col. 8, line 5) and that is transferred to data register 32 for encoding (col. 6, lines 14-15), wherein the digital bits in register 32 are serially transferred to pulse position modulator 34 which generates a serial pulse train having position modulated pulses (col. 6, lines 15-19). Calfee further teaches in a preferred form of pulse position modulation, the temporal spacing between adjacent pulses carries the digital information (col. 6, lines 19-20). Accordingly, Calfee teaches the recited limitations such as: receiving digital bits of data, or at least two digital bits of data (note that input signal 30 consists of 20 data bits) from a memory unit (32, fig. 2) and transforming the bits of data into a transmission pulse (34, fig. 2), wherein the transmission pulse having a pulse characteristic selected from a set of three or more predetermined pulse characteristics (col. 6, line 19, col. 7, line 24, col. 8, lines 11-15), one of which is corresponding to the bits of data (col. 8, lines 9-12), as discussed above in claim 1. Remark further states Calfee does not disclose multiple bits are represented by a single pulse, or a plurality of bits that are transformed into the same transmission pulse. However,

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Calfee teaches the digital bits are serially transferred to pulse position modulator which generates a serial pulse train. Therefore, Calfee teaches multiple bits are represented by a *single* pulse (the serial pulse train), or that a plurality of bits are transformed into the *same* transmission pulse (the serial pulse train). Furthermore, it is noted that the features upon which applicant relies (i.e., a plurality of bits that are transformed into the same transmission pulse, a single transmission pulse that can represent “at least two digital bits of data”, or multiple bits that are represented by a single pulse) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Remark further states Miwa does not disclose receiving at least two digital bits of data from a memory unit, and transforming the at least two digital bits of data into a transmission pulse, and neither Miwa, nor Fitelson, nor Swenson disclose that multiple digital bits are transferred in the same transmission pulse of light. Miwa teaches an input circuit 18 (fig. 1) that receives information signals from a memory unit 17 (col. 4, lines 61-68), wherein the input circuit 18 is designed so that input is done from input switches representing individual bits to corresponding flip-flops (col. 5, lines 5-8 and fig. 3). Accordingly, Miwa teaches receiving at least two digital bits of data from a memory unit and transforming the two digital bits of data into a transmission pulse (or in the same transmission pulse), as discussed above in claims 21 and 28. Furthermore, the limitation “multiple digital bits are transferred in the same transmission pulse of light” is not recited in claim 28. Remark further states McCorkle does not disclose “representing at least two bits of data by varying a pulse characteristic of a time modulated ultrawideband pulse”. McCorkle discloses a method of data communication that is comprised of processing high speed digital data for communication to

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produce processed data, generating short impulse wavelets, constructing a digitally modulated ultrawideband signal from the short impulse wavelets in response to bits of the processed data (col. 9, lines 59-62, col. 14, lines 40-45). Therefore, McCorkle discloses representing at least two bits of data by varying a pulse characteristic of a time modulated ultrawideband pulse, as discussed above. Applicant's attention is directed that during the prosecution of a pending patent application the terms found in the claims should be given the broadest reasonable interpretation, *See in re Pearson*, 181 USPQ 641 (CCPA 1974).

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. R. Sedighian whose telephone number is (571) 272-3034. The examiner can normally be reached on M-F (from 9 AM to 5 PM).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
M. R. SEDIGHIAN  
PRIMARY EXAMINER